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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/608,067	06/30/2000	Kazuhiro Arai	P107336-00005	1137

7590 10/17/2002

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EXAMINER

CRUZ, MAGDA

ART UNIT PAPER NUMBER

2851

DATE MAILED: 10/17/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/608,067

Applicant(s)

ARAI ET AL.

Examiner

Magda Cruz

Art Unit

2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 April 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 08 June 2001 is: a) ☒ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-8, 11, 13-21, 24, 26-33, 36 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shikama in view of Suzuki et al.

Shikama (US Patent Number 5,285,287) discloses a rear projection display device (column 2, lines 1-5) comprising a light source lamp (1), color splitting means (14B, 14G) for splitting light (2) emitted from the light source lamp (1) into a plurality of color components (R, G, B), a plurality of liquid crystal panels (3B, 3G, 3R) for optically modulating each color light split by the color splitting means (14B, 14G), color synthesizing means (15) for synthesizing each of the color light modulated by the liquid crystal panels (3B, 3G, 3R), and projection means (4) for projecting image light (110).

Shikama teaches the salient features of the present invention, except a polarization direction of at least one color component out of the image light irradiated on the screen: parallel to a vertical cross section of the screen; parallel to a horizontal cross section of the screen; parallel to a plane including the image light irradiated on the screen and a normal of the screen.

Suzuki et al. (US Patent Number 6,379,010 B1) discloses a polarization direction of at least one color component out of the image light irradiated (column 24, lines 3-5) on the screen (42): parallel to a vertical cross section (column 24, lines 11-12) of the screen (42); parallel to a horizontal cross section (Figure 1) of the screen (42); parallel to a plane including the image light irradiated on the screen (42) and a normal of the screen (column 24, lines 15-30), and a retardation plate (40) for adjusting the polarization direction (column 23, lines 60-64).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize the polarization direction disclosed by Suzuki et al. in combination with Shikama's invention, for the purpose of providing a projection type display which is superior in gradation display and high in quality.

3. Claims 9-10, 12, 22-23, 25, 34-35 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shikama in view of Suzuki et al. as applied to claims 1-8, 11, 13-21, 24, 26-33, 36 and 38 above, and further in view of Shibazaki.

Shikama (US Patent Number 5,285,287) in combination with Suzuki et al. (US Patent Number 6,379,010 B1) discloses the claimed structure except the plurality of aspherical mirrors functioning as a lens, a Fresnel lens, and a lenticular lens, where the relation $i\text{-min} < \alpha < i\text{-max}$ is satisfied.

Shibazaki (US Patent Number 5,477,394) teaches the use of aspherical mirrors functioning as a lens (column 5, lines 63-67 and column 6, lines 1-8), a Fresnel lens (18) and a lenticular lens (19), where the relation $i\text{-min} < \alpha < i\text{-max}$ is satisfied (see Figure 4).

It would have been obvious at the time the invention was made for one of ordinary skill in the art to utilize such features (for example: the aspherical mirrors functioning as a lens in a rear projection display device) disclosed by Shibazaki, in combination with Shikama and Suzuki et al.'s invention, to reduce the size of said projector.

Response to Arguments

4. Applicant's arguments with respect to claims 1-38 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hashizume (US Patent Number 6,152,566) discloses a projector for modulating polarized luminous flux.

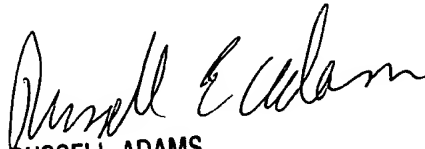
Suzuki, et al. (US Patent Number 5,506,642) teaches a projector comprising liquid crystal display panels and a projection lens for projecting the modulated light to a screen.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Magda Cruz whose telephone number is (703)308-

6367. The examiner can normally be reached on Monday through Thursday 8:00-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russ Adams can be reached on (703)308-2847. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9318 for regular communications and (703)872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-1782.


RUSSELL ADAMS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

Magda Cruz
Patent Examiner
October 11, 2002